FIBERROAD

Managed Industrial Grade Media Converter

Product Data Sheet

Managed Industrial Fiber Media Converter

The Managed Industrial Media Converter is an IEEE 802.3ah compliant copper to fiber Gigabit Ethernet solution designed to make conversion between 10/100/1000Base-T and 100/1000Base-X with SFP modules. With SNMP and Web-based management in the standalone type or play as remote unit communicate with FR6016 Platform to realize centralized management. The administrator can monitor, configure and control the activity of each unit and remotely connected OAM compliant converter. Converter settings include bandwidth control, duplex, and speed configuration, VLAN tagging, limited Q-in-Q support and SFP DDMI. When used as stand-alone converters, the FR-6103I can be managed by a friendly Web Smart user interface via any web browser.

Main Features

- 1x10/100/1000Base-T to 100/1000Base-X SFP Converter
- Auto-Cross over for MDI/MDIX in TP port
- Auto-Negotiation or manual mode in TP port
- Industrial Grade Standard, -40 to +75℃ operating temperature, IP40 Rating
- Supports flow control Enable or Disable
- Supports Jumbo Frame 16K Packet
- Ingress/Egress bandwidth control
- Supports in-band IEEE802.3ah management
- Firmware upgrade via Web (Centralized Management Only)
- Dying gasp(Remote power failure detection on standalone)
- Supports Link Fault Pass-Through(LFPT)Function
- Support Auto Laser Shutdown(ALS) Function(Centralized Management Only)
- Support SNMP, Web Management

The industrial converter is equipped with rugged IP40 metal enclosure to ensure industrial operation in harsh environments where extreme low or high temperatures can be experienced.
It is specially designed for outdoor and industrial applications such as city surveillance systems, smart manufacturing, etc. It is ideal for miniaturization and rapid deployment, provides users a cost-effective and highly reliable option.

Ethernet Interface	
Ports	1x10/100/1000Base-TX RJ45 ports, 1x100/1000Base-FX SFP/SC
Port Mode(Tx)	Auto Negotiation Speed Full/Half Duplex Mode Auto MDI/MDI-X Connection
Standards	IEEE 802.3 for 10BaseT IEEE 802.3u for 100BaseT(X) and 100BaseFX IEEE 802.3ab for 1000BaseT(X) IEEE 802.3z for 1000BaseSX/LX/LHX/ZX IEEE 802.3x for flow control
Maximum Packet Length	Up to 16K
Forward Filter Rate	14,880pps(10Mbps) 148,800pps(100Mbps) 1,488,000pps(1000Mbps)
Transmission Mode	Store and Forward (full/half duplex mode)
Transmission Distance	
SFP Port	Depends on optical module(0-160km)
RJ45 Port Transmission Distance	100m (using standard CAT5/CAT5e cable)

PoE & Power Supply

Model	**FR-6101I**	**FR-6103I**	**FR-6101IP**	**FR-6103IP**	**FR-6101IBT**	**FR-6103IBT**
PoE Ports	N/A		IEEE802.3af/at @PoE+		IEEE802.3af/at/bt @PoE++	
Power Supply Pin	N/A		Default: 1/2(+), 3/6(-)		Default: 1/2(+), 3/6(-) or 4/5(+), 7/8(-)	
Max Power Per Port	N/A		30w		90W	
Total PWR /Input Voltage	N/A		40W (DC48-56V) (Model dependent)		100W(DC48-56V) (Model dependent)	
Power Consumption	5 Watts Max(without PoE load)					
Power Inputs	2					
Input Voltage	9-56VDC,Redundant dual inputs					
Operating Voltage	Non-PoE Mode: 9-56VDC 30W PoE Mode: 48-56VDC 90W PoE Mode: 52-56VDC(IEEE802.3bt model)					
Connector	1 removable 6-contact terminal blocks Pin 1/2 for Power 1, Pin 3/4 for Power 2, Pin 5/6 for fault alarm					
Protection	Overload Current Protection, Reverse Polarity Protection					

Physical Characteristics	
Housing	Aluminum case
IP Rating	IP40
Dimensions	120mm x 90mm x 35mm (L x W x H)
Installation	DIN Rail/Wall Mount
Weight	350g
Environmental	
Operating Temperature	-40℃~75℃ (-40 to 167 ℉)
Operating Humidity	5%~90% (non-condensing)
Storage Temperature	-40℃~85℃ (-40 to 185 ℉)
MTBF	907,476 hours @ Telcordia SR-332 Standard
Heat Dissipation	34 BTU/h (non-PoE mode)
Cooling	Passive Cooling, Fanless Design
Noise Level	0 dBA

LED	State	Description
PWR (P1&P2)	ON	Power is being supplied
	OFF	Power is not being Supplied.
RUN	Blinking	The system is running well
Link/ACT (1-2)	ON	Port connection is active
	Blinking	Data transmitted
	OFF	Port connection is not active.
ALM	ON	Has alarm information
	OFF	No alarm information

DIP Switch	State	Description
#1	ON	LFPT Enable
	OFF	LFPT Disable
#2	ON	Set as remote Unit
	OFF	Set as standalone unit
#3	ON	Setting 1: #3 OFF and #4 OFF, RJ45 Data Rate as Auto Mode Setting 2: #3 OFF and #4 ON, RJ45 Data Rate as 1000M Setting 3: #3 ON and #4 OFF, RJ45 Data Rate as 100M Setting 4: #3 ON and #4 ON, RJ45 Data Rate as 10M
	OFF	
#4	ON	
	OFF	

Package Contents	
Device	1x Industrial Media Converter
Installation Kit	1x DIN-Rail Clip 2x Wall-Mount Kits
Documentation	1 x Quick installation guide 1 x Warranty card 1x Product notice

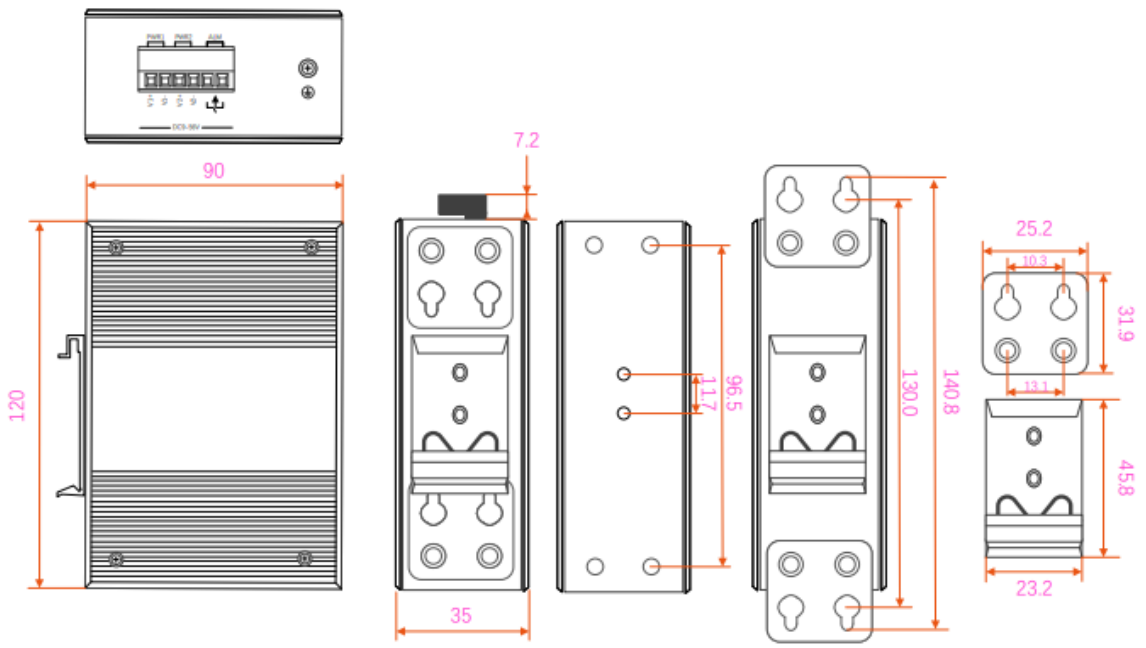
Accessories(Sold Separately)

Power Supply	
FR-I-40-24	DIN-rail 24 VDC power supply with 40W/1.7A, 85 to 264 VAC, or 120 to 370 VDC input, -20 to 70°C operating temperature
FR-I-60-24	DIN-rail 24 VDC power supply with 60W/2.5A, 85 to 264 VAC, or 120 to 370 VDC input, -20 to 70°C operating temperature

SFP Optical Transceiver	
FRSX-1L311C-I	1.25Gb/s 1310nm 10km SFP, wide operation temperature range of -40℃-85℃ (-40℉ - 185℉)
FRSX-1L341C-I	1.25Gb/s 1310nm 40km SFP，wide operation temperature range of -40℃-85℃ (-40℉ - 185℉)
FRSX-1L5X1C-I	1.25Gb/s 1550nm 80/100km SFP，wide operation temperature range of -40℃-85℃ (-40℉ - 185℉)
FRSX-1L3523/5323C-I	1.25Gb/s 1310nm/1550nm 20km BiDi SFP，wide operation temperature range of -40℃-85℃ (-40℉ - 185℉)

Armored Fiber Patch Cable / LAN Cable	
FRPC-A-LC	Armored LSZH LC UPC to LC UPC Duplex OS2 single mode 7.0mm for Ourdoor Application , 1-50m
FRLC-A-CAT6	Armored Cat6 Snagless shielded(SFTP) Ethernet Network Patch Cable, 26AWG, 1000Base-T, 0.5m – 3m

Dimensions **Unit: mm**



Regulatory & Warranty	
Safety	IEC/EN 62368-1
EMI	EN55032 Class A, CISPR 32 FCC Part 15B Class A
EMS	EN61000-4-2 (ESD) EN61000-4-3 (RS) EN61000-4-4 (EFT) EN61000-4-5 (Surge) EN61000-4-6 (CS) EN61000-4-8 (PFMF
Shock	IEC 60068-2-27
Free Fall	IEC 60068-2-32
Vibration	IEC 60068-2-6
Environmental	RoHS
Warranty	5 Years, Details See: www.fiberroad.com

Precautions

To avoid damage to the equipment and personal injury caused by improper use, please observe the following precautions:

- Keep the power off during installation, wear an anti-static wrist, and ensure that the anti-static wrist is in good contact with the skin to avoid potential safety hazards.
- The switch can work normally under the correct power supply. Please confirm that the power supply voltage matches the voltage indicated by the switch.
- Before powering on the switch, please make sure that the power circuit is not overloaded, so as not to affect the normal operation of the switch and even cause unnecessary damage.
- To avoid the risk of electric shock, do not open the case while the switch is working, even if it is not charged, do not open it yourself.
- Before cleaning the switch, pull out the power plug of the switch. Do not wipe with a wet cloth. Do not use liquid to clean it.
- The equipment installed in the rack is generally from bottom to top to avoid overload installation.
- Avoid placing other heavy objects on the surface of the switch to avoid accidents.

Order Information

Model Number	10/100Base-T(X) RJ45	10/100/1000Base-T(X), RJ45	100/1000Base-FX Port	Optical Port Connector Option	PoE Standard	Input Voltage	Operating Temp.
FR-6101I	1	—	1	LC/SC/ST/FC	—	DC9-56V	-40 to +75℃
FR-6101IP	1	—	1	LC/SC/ST/FC	IEEE802.3af/at	DC9-56V	-40 to +75℃
FR-6101IBT	1	—	1	LC/SC/ST/FC	IEEE802.3af/at/bt	DC9-56V	-40 to +75℃
FR-6103I	—	1	1	LC	—	DC9-56V	-40 to +75℃
FR-6103IP	—	1	1	LC	IEEE802.3af/at	DC9-56V	-40 to +75℃
FR-6103IBT	—	1	1	LC	IEEE802.3af/at/bt	DC9-56V	-40 to +75℃

The information in this document is subject to change without notice. Fiberroad has made all effects to ensure the accuracy of the information, but all information in this document does not constitute any kind of warranty. Visit our website for the most up-to-date product information

For more information

For more information about Fiberroad Smart Industrial Ethernet series products,
Visit https://www.fiberroad.com or contact your local account representative.